

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Canceled).

2. (Currently Amended) A performance analysis ~~distributed computer~~ system as in claim 20 ~~4~~ wherein the task state data ~~log of states~~ is maintainable during use of an identified multi-agent system in providing more than one instance of a service, such that performance of at least one agent-managed resource may be analyzed with respect to each of said instances.

3. (Currently Amended) A performance analysis ~~distributed computer~~ system as in claim 20 ~~4~~ wherein the task state data ~~log of states~~ is maintainable during use of an identified multi-agent system in providing instances of at least two different services, such that performance of at least one agent-managed resource may be analyzed with respect to each of said instances.

4. (Currently Amended) A performance analysis ~~distributed computer~~ system as in claim 20 ~~4~~ wherein the performance analyzer measures the number of occurrences of a particular task state for one or more agent-managed ~~respective~~ resources and the performance measure is determined according to whether the number of occurrences reaches a predetermined threshold.

5. (Currently Amended) A performance analysis ~~distributed computer~~ system as in claim 4 wherein the threshold comprises a percentage number of

occurrences of said particular task state in relation to the number of occurrences of that task state plus other task states.

6. (Currently Amended) A performance analysis ~~distributed computer system~~ as in claim 20 4-wherein the task states available to an agent-managed ~~a~~ respective resource in carrying out an allocated process comprise at least failure and success.

7. (Currently Amended) A performance analysis ~~distributed computer system~~ as in claim 20 4-wherein the data received from the multi-agent system in use includes a start time for provision of the relevant service and at least one of said task allocation data log of processes and said task state data log of states also logs the time taken by at least one identified agent-managed resource to carry out a process.

Claims 8-9 (Canceled).

Claim 10 (Canceled).

11. (Currently Amended) A method as in claim 21 4-wherein the task state data log of states is maintainable during use of an identified multi-agent system in providing more than one instance of a service, such that performance of at least one agent-managed resource may be analyzed with respect to each of said instances.

12. (Currently Amended) A method as in claim 21 4-wherein the task state data log of states is maintainable during use of an identified multi-agent system in providing instances of at least two different services, such that performance of at least one agent-managed resource may be analyzed with respect to each of said instances.

13. (Currently Amended) A method as in claim 21 ~~10~~ wherein the performance analysis measures the number of occurrences of a particular task state for one or more agent-managed ~~respective~~ resources and the performance measure is determined according to whether the number of occurrences reaches a predetermined threshold.

14. (Currently Amended) A method as in claim 13 wherein the threshold comprises a percentage number of occurrences of said particular task state in relation to the number of occurrences of that task state plus other task states.

15. (Currently Amended) A method as in claim 21 ~~10~~ wherein the task states available to an agent-managed ~~a respective~~ resource in carrying out an allocated process comprises at least failure and success.

16. (Currently Amended) A method as in claim 21 ~~10~~ wherein the data received from the multi-agent system in use includes a start time for provision of the relevant service and at least one of said task allocation data ~~log of processes~~ and said task state data ~~log of states~~ also logs the time taken by at least one identified agent-managed resource to carry out a process.

Claim 17 (Canceled).

18. (Previously Presented) A distributed computer system including at least one computer, said at least one computer programmed to perform processing and analysis, said system comprising:

- 1) a multi-agent system comprising a plurality of collaborative agents arranged in operation to manage among themselves resources to carry out processes to provide one or more services;
- 2) a performance analysis system for use in storing and analyzing data generated during use of said multi-agent system, said performance analysis system having:
  - i) data storage for storing:
    - a) collaboration data indicative of how said agents have organized the resources they represent in order to provide a service; and
    - b) resource performance data indicative of the performance of said resources in use when so organized;
  - ii) one or more inputs for receiving a service request identifying a performance analysis service to be provided by the performance analysis system to the multi-agent system; and
  - iii) a performance analyser for analyzing the collaboration data and resource performance data to generate a performance measure with respect to said resources as organized by said multi-agent system.

19. (Previously Presented) A distributed computer system as in claim 18 wherein said collaboration data comprises representations of service agreements made between said agents, and said performance data indicates whether said service agreements have been met.

20. (New) A performance analysis system for use in storing and analysing data generated during use of multi-agent business process management systems, said performance analysis system having:

- i) data storage including:
    - a) a business service definitions store storing one or more business service definitions, each identifying at least one task involved in provision of a business service by at least one agent in one of said multi-agent systems;
    - b) a task allocation store storing task allocation data indicating tasks allocated to agents in said multi-agent system;
    - c) a task state store storing task state data;
    - d) a performance analysis service definitions store storing one or more performance analysis service definitions, each performance analysis service definition including an indication of performance data inputs required for provision of said performance analysis service;
  - ii) one or more inputs for receiving a performance analysis service request from a multi-agent system, said request including a performance analysis service identifier;
  - iii) request processing means arranged in operation to access a performance analysis service definition from the performance analysis service definitions store in accordance with the performance analysis service identifier contained in a received performance analysis service request;
- said data storage further comprising:

- e) a data input store for storing business service definitions, task allocation and task state data for storage in said data stores included within the performance data inputs indicated to be required for the requested performance analysis service by the accessed performance analysis service definition; and
- iv) a performance analyser for analysing the performance data in said data stores to generate, and output to the multi-agent system, a performance measure with respect to the multi-agent system based on analysis of the stored data.

21. (New) A method for analysing performance of multi-agent business process management systems, said method comprising:

- i) storing:
  - a) business service definitions, each identifying at least one task involved in provision of a business service by at least one agent in one of said multi-agent systems;
  - b) task allocation data indicating tasks allocated to agents in said multi-agent system;
  - c) task state data;
  - d) one or more performance analysis service definitions, each performance analysis service definition including an indication of performance data inputs required for provision of said performance analysis service;

- ii) receiving a performance analysis service request from a multi-agent system, said request including a performance analysis service identifier;
- iii) processing said request by retrieving a performance analysis service definition associated with the performance analysis service identifier contained in said received performance analysis service request;
- iv) further receiving and storing business service definitions, task allocation and task state data included within the performance data inputs indicated to be required for the requested performance analysis service by the accessed performance analysis service definition; and
- v) analyzing the performance data in said data stores to generate, and output to the multi-agent system, a performance measure with respect to the multi-agent system based on analysis of the stored data.